

Application Serial No. 10/005,052
Reply to Office Action dated June 10, 2004

**EXPEDITED HANDLING PROCEDURE
PURSUANT TO 37 C.F.R. § 1.116**

Amendments to the Claims:

This listing of claims will replace all prior versions, and listing, of claims in the application:

Listing of Claims:

1. (currently amended) A method for treating a grain based product bran, comprising:
 Reacting bran having a native ferulic acid concentration with 0.1 to 1 parts ozone
 per 100 parts bran ~~ozone~~ to produce treated bran having a reduced ferulic acid finished
 concentration of less than ~~50 ppm~~ 30 ppm.
2. (original) The method of claim 1, additionally comprising the step of:
 Acidifying bran with an edible acidulant in amounts sufficient to reduce the pH of
 the bran to about 4-6 to form acidified bran prior to treating with ozone.
3. (original) The method of claim 2 wherein the finished ferulic concentration of the
treated bran is less than 50% of the native concentration of the bran.
4. (original) The method of claim 3 wherein the bran has a native concentration of
vanillin and wherein the treated bran has an elevated finished concentration of vanillin.
5. (currently amended) The method of ~~claim 3~~ claim 4 wherein the finished
concentration of vanillin ~~as is~~ is at least twice the native concentration of vanillin.
6. (original) The method of claim 2 wherein the bran is derived from a member selected
from the group consisting of barley, corn (maize), oats, rice, rye, soybeans, wheat, and
mixtures thereof.
7. (original) The method of claim 6 wherein the bran is wheat bran.

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8. (original) The method of claim 7 wherein the bran is red wheat bran.
9. (currently amended) The method of claim 1 wherein the bran is in dry powder form having an average particle size of about 100 microns.
10. (currently amended) ~~The method of claim 2 further comprising:~~ A method for treating a grain based product bran, comprising:
Reacting bran having a native ferulic acid concentration with ozone to produce treated bran having a reduced ferulic acid finished concentration;
Acidifying bran with an edible acidulant in amounts sufficient to reduce the pH of the bran to about 4-6 to form acidified bran prior to treating with ozone;
Prior to acidifying, treating the bran with a chelating agent to remove transition metals to produce treated bran; and
Blanching the treated bran to inactivate catalase and peroxidase enzymatic systems to produce blanched bran.
11. (currently amended) The method of claim 10 wherein the bran is treated with the chelating agent for about one (1) to ~~45~~ fifteen (15) minutes at a temperature of about 70 to 90°C.
12. (currently amended) The method of claim 10 wherein the chelating agent is selected from the group consisting of orthophosphate, metaphosphate, pyrophosphate, polyphosphate, calcium ethylene diamine tetra acetic acid ("~~EDTA~~") (EDTA) and sodium EDTA.
13. (original) The method of claim 12 wherein the chelating agent is calcium EDTA or sodium EDTA in a concentration of between about 0.02 and 0.1%.

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14. (original) The method of claim 10 wherein the blanching step is performed at a temperature of between about 75 to 85°C for about three (3) to ten (10) minutes, further wherein residual enzyme activity is below about 10 CIU/g bran following the blanching step.

15. (currently amended) The method of claim 10 further comprising:

Washing and rinsing the bran to produce wet bran;

Filtering the wet bran to produce filtered wet bran; and

~~Treating the filtered wet bran with catalase to remove residual acidulant to produce treated filtered wet bran; and~~

Drying the treated filtered wet bran to produce dried treated bran having a moisture content ranging from about 6% to 15%.

16. (currently amended) The method of claim 2 wherein the acidifying agent acidulant comprises a mineral acid.

17. (currently amended) The method of claim 2 wherein the acidifying agent acidulant comprises an edible organic acid.

18. (original) The method of claim 2 wherein the bran is in powder form and has a moisture content ranging from about 6% to about 15%.

19. (currently amended) The method of claim 18 wherein the treatment step comprises contacting about 100 parts acidified bran with about ~~0.1 to 1~~ 0.3 to 0.7 parts ozone.

20. (original) The method of claim 1 wherein the bran is pure bran.

21. (original) The method of claim 2 wherein the bran is admixed with flour.

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22. (original) The method of claim 17 wherein the edible organic acid is dissolved in water.
23. (currently amended) The method of claim 19 wherein the bran is reacted with ozone treatment is practiced at atmospheric pressure.
24. (original) The method of claim 20 additionally comprising the step of:
Blending the treated bran with flour to form a whole wheat flour comprising treated bran.
25. (original) The method of claim 24 additionally comprising the step of:
Forming a dry mix for baked goods by admixing the whole wheat flour comprising treated bran with dry mix ingredients.
26. (currently amended) The method of claim 24 wherein all the flour in the dry mix is supplied by the ~~whole wheat~~ whole wheat flour comprising the treated bran.
27. (original) The method of claim 24 additionally comprising the steps of:
Combining the whole wheat comprising treated bran with cereal ingredients to form a cereal blend;
Cooking the cereal blend to form a cooked cereal dough;
Forming the cooked cereal dough into dried finished cereal pieces.
28. (original) The method of claim 27 wherein the finished cereal pieces are puffed.
29. (original) The method of claim 28 wherein the puffed cereal pieces are deep fat fried.
30. (original) The method of claim 27 wherein the bran is wheat bran.

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31. (original) The method of claim 30 wherein at least a portion of the wheat bran is red wheat bran.
32. (original) The method of claim 30 wherein the dried finished cereal pieces are flakes.
33. (original) The product prepared by the method of claim 1.
34. (original) The product prepared by the method of claim 2.
35. (original) The product prepared by the method of claim 4.
36. (original) The product prepared by the method of claim 1 having an antioxidant activity about 15 to 35% higher than native bran.
37. (original) The product prepared by the method of claim 10.
38. (previously amended) The product prepared according to the method of claim 11.
39. (previously amended) The product prepared according to the method of claim 18.
40. (previously amended) The product prepared according to the method of claim 21 wherein about five (5)% treated bran, by weight, is added to the whole wheat flour.
41. (currently amended) A grain product comprising cereal bran having a ferulic acid concentration of less than 30 ppm and an elevated concentration of vanillin.
42. (original) The grain product of claim 41 having a pH ranging from about 4-6.
43. (original) The grain product of claim 42 having a moisture content ranging from about 10% to 15% prepared from soft white wheat or hard white wheat.

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44. (previously amended) The grain product of claim 43 wherein the grain product is prepared from light bran.
45. (previously amended) The product of claim 40 having a pH of about 6.3 to 6.7.
46. (original) The grain product of claim 41 in the form of a finished baked good.
47. (currently amended) The ~~whole wheat flour~~ method of claim 31 wherein the whole wheat flour is admixed with sugar, salt, and leavening.
48. (previously amended) The grain product of claim 41 wherein the grain product is added to foods selected from the group consisting of dry mixes, ready-to-eat cereals and soy.